



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/596,748

06/22/2006

Roland Carlsson

P19146-US1

1054

27045

7590

06/16/2009

ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR 1-C-11
PLANO, TX 75024

EXAMINER

GHOWRWAL, OMAR J

ART UNIT

PAPER NUMBER

2416

MAIL DATE

DELIVERY MODE

06/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,748	Applicant(s) CARLSSON ET AL.	
	Examiner OMAR GHOWRWAL	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Remarks

1. This Office action is considered fully responsive to the amendment filed 4/15/09.
2. The objection to the specification has been withdrawn because it has been amended accordingly.
3. The Double Patenting rejection has been withdrawn because claims 14-20 have been canceled.
4. The rejection under U.S.C. 101 has been withdrawn because claim 20 has been canceled.
5. The rejection under U.S.C. 112 has been withdrawn because claim 16 has been canceled.
6. The objections to the claim have been withdrawn because claims 12-13 have been amended accordingly, and claims 14, 16, and 20 have been withdrawn. The objection to claim 11 is upheld because the very last word in the claim "(P_PDS(t-1)" still requires a ")" at the end of it.

Response to Arguments

7. Applicant's arguments filed 4/15/09 have been fully considered but they are not persuasive.
8. In response to applicant's argument that Choi fails to identify that the overlap *causes any problem*, a recitation of the intended use (i.e. to overcome a problem) of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior

Art Unit: 2416

art. If the prior art structure is capable of performing the intended use, then it meets the claim.

9. The Applicant also alleges that the combination merely does not teach the last limitation of claim 11. However, the Examiner clearly points to specific portions of Ishii and Lee to teach this limitation. See the rejection below for ever further clarification pertaining to this claim. Additionally, the Applicant alleges the Examiner does not have a basis for combining the teachings of the three references, however, the Examiner has clearly given motivational statements for both the Ishii and Lee references in the rejection below.

Claim Objections

10. Claim 11 is objected to because of the following informalities: the very last word in the claim "(P_PDS(t-1)" still requires a ")". Appropriate correction is required.

11. Claims 13 is objected to because of the following informalities: the newly added text is missing "the" between "of present" in both instances of the newly added text. Appropriate correction is required.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 7,283,508 B2 to *Choi et al.* ("*Choi*") in view of U.S. Publication No.

Art Unit: 2416

2004/0202104 A1 to *Ishii et al.* ("*Ishii*") and in further view of U.S. 2003/0125068 A1 to *Lee et al.* ("*Lee*").

As to **claim 11**, *Choi* discloses a method, in a transmission unit, for transmitting packet data on at least one shared packet data channel and control data on a control channel (fig. 3, HS-PDSCH and HS-SCCH), wherein control data for a given transmission interval (t) on the control channel pertains to at least the allocation of data for an associated transmission interval (t) on the shared packet data channel (fig. 3 take given interval to be the second TTI), wherein the transmission interval (t) of the control channel is overlapping the transmission interval (t) of the shared packet data channel (fig. 3, note the overlap), such that a first part of the control data of a present transmission interval of the control channel is transmitted while data may be transmitted on the shared packet data channel according to a previous transmission interval (t-1) (fig. 3, HS-SCCH and HS-PDSCH overlap at 2nd TTI, and first part of control channel transmitted according to 1st TTI), and the second part of the control data of the present transmission interval of the control channel is transmitted while packet data is to be transmitted on the shared packet data channel according to the present transmission interval (t) (fig. 3, this is 2nd TTI, where there is overlap), the shared packet data channel and the control channel operating on the same frequency spectrum (fig. 3, col. 4, lines 54-64, HS-PDSCH and HS-SCCH are part of HSDPA, i.e. which is a standard of WCDMA, which has channels operating on same frequency spectrum), the method comprising the steps of:

scheduling data for transmission (fig. 13, scheduler 1350);

Choi does not expressly disclose determining the available power ($P_{AVLB}(t)$) for transmission on the control channel and the shared packet data channel;

determining: the power level of the shared packet data ($P_{PDS}(t-1)$) at a previous transmission interval;

the power level of the shared packet data ($P_{PDS}(t)$) at the present transmission interval;

the power level of the control channel ($P_{SC_P1}(t)$) for the first part of the present transmission interval;

setting the power level of the second part of the control data of the present transmission interval of the control channel ($P_{SC_P2}(t)$) as the power level of the first part ($P_{SC_P1}(t)$) adjusted by a function (F) based on the power level of the shared packet data channel at the present transmission interval ($P_{PDS}(t)$) and the previous transmission interval ($P_{PDS}(t-1)$).

Ishii discloses in fig. 3, 6, Max total transmission power of base station and max total transmission power of HS-channel (available power), and the power of the HS-SCCH and HS-PDSCH channels at previous and current TTI's. Furthermore, the power level of the shared channel is updated as $P_{HS-SCCH} = P_{A-DPCHi} + del(i)$ (para. 0064), i.e. setting the power level depending upon another channel power level and various factors incorporated in $del(i)$. Additionally, it is known that HS-SCCH power is affected by that of PDSCH (para. 0022), and adjusting $del(i)$ is based on feedback information (i.e. past) of HS-DSCH in the HS-PDSCH, i.e. HS-PDSCH is used in the shared channel update. Furthermore, see fig. 2, which illustrates para. 0022 (which

Art Unit: 2416

was cited previously), HS-SCCH#2 (take as $P_SC_P2(t)$) is affected by HS-PDSCH#2, which is affected by HS-SCCH#1 (hence HS-SCCH#1, affects the second part, HS-SCCH#2), which is affected by HS-PDSCH#1 (which is at the present and past time intervals of HS-SCCH#2, and adjusts HS-SCCH#1). HS-SCCH#1 is a separate TTI than HS-SCCH#2, however the present and past intervals of HS-PDSCH affect HS-SCCH#2 (a function of time—i.e. function “F” that adjusts HS-SCCH#1 in the first TTI, and therefore HS-SCCH#2), hence all that is missing is that what is adjusted occurs at a “first part” of the same TTI of data.

Choi and Ishii are analogous art because they are from the same field of endeavor with regards to data communication.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the power measurements as taught by Ishii into the invention of Choi. The suggestion/motivation would have been to efficiently control transmission power of a shared control channel (Ishii, para. 0025).

Lee discloses in fig. 1, a power control algorithm measuring E_b/N_t , then calculating a new E_b/N_t_new . A modified $E_b/N_t_mod = (E_b/N_t)_new + F(\text{interference, position of terminal, transmission power, channel condition})$, i.e. setting a shared channel update as the first part after frame received $(E_b/N_t)_new$ adjusted by “F”, which contains factors including interference, transmission power, and channel condition (also present time factors). Note that in fig. 1, this measurement occurs after a frame is received, i.e. in the same TTI that occurs after a frame reception, hence, a power measurement (E_b/N_t_mod) is updated based on a previous part (E_b/N_t_new) of that

Art Unit: 2416

measurement within the same TTI, and “F” in fig. 1 can correspond to the HS-PDSCH #1/2 parameters of Ishii and this adjusts the previous part (E_b/N_t_{new})—thereby meeting the claim limitations not found in Choi.

Choi, Ishii, and Lee are analogous art because they are from the same field of endeavor with regards to data communication.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the power measurements as taught by Lee into the invention of Choi and Ishii. The suggestion/motivation would have been to perform power control in a communication system (Lee, para. 0009).

14. **Claim 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 7,283,508 B2 to *Choi et al.* (“*Choi*”), U.S. Publication No. 2004/0202104 A1 to *Ishii et al.* (“*Ishii*”), and U.S. 2003/0125068 A1 to *Lee et al.* (“*Lee*”) and in further view of U.S. Publication No. 2004/0086137 A1 to *Yu et al.* (“*Yu*”).

As to claim 12, *Choi, Ishii, and Lee* further disclose the method according to claim 11, wherein the function (F) corresponds to the difference between the power level of the shared packet data channel at the present transmission interval ($P_{PDS}(t)$) and an adjustment factor (Ishii, para. 0079, $del(i) = del(i) - del(adj) * BLER_{target}$). In addition, the suggestion/motivation would have been to efficiently control transmission power of a shared control channel (Ishii, para. 0025).

Art Unit: 2416

Choi, Ishii, and Lee do not expressly disclose the difference between the power level of the shared packet channel at the present transmission interval ($P_{PDS}(t)$) and at the previous transmission interval ($P_{PDS}(t-1)$).

Yu discloses a factor D_p is updated by subtracting a previous power interval from a current power interval (para. 0064).

Choi, Ishii, Lee, and Yu are analogous art because they are from the same field of endeavor with regards to data communication.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the power measurement as taught by *Yu* into the invention of *Choi, Ishii, and Lee*.

The suggestion/motivation would have been to determine whether the power of the corresponding input signal is stationary (*Yu*, para. 0064).

As to claim 13, *Choi, Ishii, Lee, and Yu* further disclose the method according to claim 12, wherein the power level of the second part of the control data of present transmission interval of the control channel ($P_{SC_P2}(t)$) equals the sum of the power level of the first part of the control data of present transmission interval of the control channel ($P_{SC_P1}(t)$) and the function (F) (*Lee*, fig. 1, $E_b/N_t_mod = (E_b/N_t)_new + F$). In addition, the suggestion/motivation would have been to perform power control in a communication system (*Lee*, para. 0009).

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OMAR GHOWRWAL whose telephone number is (571)270-5691. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick Ferris can be reached on (571)272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2416

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. G./
Examiner, Art Unit 2416

/Derrick W Ferris/
Supervisory Patent Examiner, Art Unit 2416